

Inventor: Sines
Serial No. 09/364,256

PATENT APPLICATION
Navy Case No. 79,955

VERSION TO SHOW CHANGES MADE

18. An electric motor comprising:
- one or more laminations of a metallic material forming an outer casing of the electric motor;
 - one or more circular non-metallic, flat, thermally conductive disks positioned between said laminations for conducting heat generated by an electrical current flowing within the motor through said conductive disks;
 - an electrically conductive material wound in a plurality of layers within the laminations so as to form an electric field that drives an armature when an electrical current is applied;
 - thermally conductive strips placed between preselected layers of the electrically conductive material, said thermally conductive strip extending outside of the area covered by the electrically conductive material; and
 - means for conducting heat at the end of each of the non-metallic thermally conductive disks and the thermally conductive strips thereby cooling the motor.

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19. A method for cooling electrical devices having layers of electrically conductive material wound on a core comprising the steps of:

placing a non-metallic thermally conductive strip having a first end and a second end, capable of conducting heat from between layers of the electrically conductive material, with said strip extending through at least some of the layers of electrically conductive material wound on the core with both said first end and said second end extending outside of an area covered by the layers of electrically conductive material; and

conducting the heat from the layers of electrically conductive material through the first and second ends of the non-metallic thermally conductive material thereby cooling said electrical device.

20. A method as in Claim 19, further comprising the step of:

placing the non-metallic thermally conductive strip having a first and second end between a plurality of predetermined laminations of the core, said first and second ends of the non-metallic thermally conductive strip extending outside the core.

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21. A method for cooling an electrical device having layers of electrically conductive material wound on to a laminated core having a heat generating component comprising the steps of:

placing one or more non-metallic, flat, thermally conductive strips in contact with the heat generating component across its entire length, each of said thermally conductive strips extending outside of the area covered by the electrically conductive material and core and in physical contact with the electrically conductive material, thereby receiving heat from the electrically conductive material, and

removing heat from the thermally conductive strips.

22. An electric motor, as in Claim 18, further comprising one or more thermocoolers adjacent to and touching the outer casing of the motor to conduct heat from the non-metallic thermally conductive strips and the metallic laminations forming the outer casing of the motor.